(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 9 October 2003 (09.10.2003)

PCT

(10) International Publication Number WO 03/083909 A1

(51) International Patent Classification⁷: H01L 21/00, G03F 7/20

- (21) International Application Number: PCT/NL03/00247
- (22) International Filing Date: 2 April 2003 (02.04.2003)
- (25) Filing Language:

Dutch

(26) Publication Language:

English

(30) Priority Data: 1020291

2 April 2002 (02.04.2002) NL

- (71) Applicant (for all designated States except US): MAP-PER LITHOGRAPHY IP B.V. [NL/NL]; Lorentzweg 1, NL-2628 CJ Delft (NL).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): SAUNDERS, Ian [ZA/NL]; Mapper Lithography IP B.V., Lorentzweg 1, NL-2628 CJ Delft (NL).
- (74) Agent: DE HOOP, Eric; Octrooibureau Vriesendorp & Gaade, P.O. Box 266, NL-2501 AW The Hague (NL).

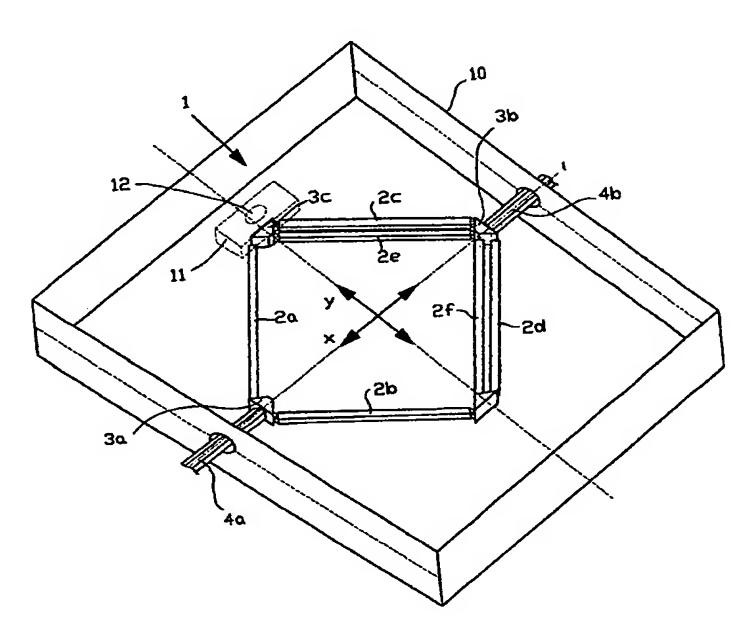
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,

[Continued on next page]

(54) Title: STAGE DEVICE FOR A VACUUM CHAMBER



(57) Abstract: The invention relates to a transfer stage for moving an object in a vacuum chamber in at least a plane of movement, comprising at least a first and a second rod each having a first and a second end, the first and second rod being connected one to the other with their first ends by means of a first hinge, the second end of the first rod being provided with a first hinged support and the second end of the second rod being provided with a second hinged support, the first and second hinged supports being roller supports and the first hinge being provided with attachment means for the object. Particularly when using this transfer stage in lithography systems fast and reliable movements are possible.



WO 03/083909 A1

WO 03/083909 A1



MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 H01L21/00 G03F7/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols) IPC 7 B25J G03F H01J H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data, COMPENDEX, INSPEC, IBM-TDB

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 180 276 A (HENDRICKSON RUTH A) 19 January 1993 (1993-01-19) column 2, line 39 - line 44 column 5, line 64 -column 6, line 60 figure 1	14-19
A	, , gu, c i	1
X	GB 616 024 A (CSF) 14 January 1949 (1949-01-14)	15-19
A	claim 1; figures	1,14
X	US 5 421 695 A (KIMURA MASAYUKI) 6 June 1995 (1995-06-06) column 6, line 33 - line 50 figure 6	15-19
A .		1,14

Further documents are listed in the continuation of box C.	χ Palent family members are listed in annex.
 Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filling date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filling date but later than the priority date claimed 	 "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family
Date of the actual completion of the international search	Date of mailing of the international search report
25 June 2003	02/07/2003
Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Heryet, C

	PC1/NL U3/UU24/					
	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.				
Category °	Changi of document, with indication, writers appropriate, or the relevant passages					
X	PATENT ABSTRACTS OF JAPAN vol. 013, no. 531 (E-851), 28 November 1989 (1989-11-28) -& JP 01 217939 A (TEL SAGAMI LTD), 31 August 1989 (1989-08-31) abstract; figures	15-19				
A	abstract, rightes	1,14				
X	PATENT ABSTRACTS OF JAPAN vol. 013, no. 483 (E-839), 2 November 1989 (1989-11-02) -& JP 01 191439 A (HITACHI LTD), 1 August 1989 (1989-08-01) abstract; figures	15-19				
Α	abstract, rigares	1,14				
X	US 4 993 696 A (KUSUNOKI HARUYUKI ET AL) 19 February 1991 (1991-02-19) column 3, line 10 -column 7, line 30	18,19				
A	figures 1,2	1,14,15				

INTERNATIONAL SEARCH REPORT

PCT/NL 03/00247

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 5180276	A	19-01-1993	WO	9415760 A1	21-07-1994
			EP	0631535 A1	04-01-1995
			DE	69225908 D1	16-07-1998
		•	DE	69225908 T2	10-12-1998
			DE	631535 T1	24-08-1995
			JP	7504128 T	11-05-1995
GB 616024	Α	14-01-1949	NONE		
US 5421695	Α	06-06-1995	JP	6132380 A	13-05-1994
JP 01217939	A	31-08-1989	JP	2512782 B2	03-07-1996
JP 01191439	Α	01-08-1989	NONE		
US 4993696	A	19-02-1991	JP	1994392 C	22-11-1995
			JP	7019829 B	06-03-1995
			JP	63169739 A	13-07-1988
			JP	1923010 C	25-04-1995
			JP	6052302 B	06-07-1994
			JP	63138292 A	10-06-1988
			JP	2083692 C	23-08-1996
			JP	7117590 B	18-12-1995
			JP	63139288 A	11-06-1988
			JP	1963332 C	25-08-1995
			JP	6097051 B	30-11-1994
			JP DE	63140115 A 3740561 A1	11-06-1988 21-07-1988